CLAIMS

1. A hermetic compressor comprising a housing which contains oil and houses a compression mechanism for compressing a refrigerant gas,

the compression mechanism comprising:

a crankshaft disposed in a vertical direction and having a main shaft and an eccentric shaft;

a block forming a cylinder;

a piston reciprocating in the cylinder in a direction of a cylinder axis;

a piston pin disposed on the piston in a way in which a center axis is in parallel to the eccentric shaft;

a connecting rod for connecting the eccentric shaft to the piston pin; and

an oil supplying structure for supplying the oil to an outer circumferential surface of the piston;

wherein the piston has an under cut on the outer circumferential surface excluding a sliding surface existing in a parallel direction and a perpendicular direction of the piston pin viewed from an axial direction of the piston; and the under cut separated from a top surface at a cylinder side of the piston and communicates with space inside the housing at least when the piston is in a bottom dead center.

2. The hermetic compressor according to claim 1, wherein an area of the under cut is not less than one half of an area of the outer circumferential surface of the piston.

3. The hermetic compressor according to claim 1, wherein an angle made by an edge of the under cut and the outer circumferential surface of the piston is an acute angle.

4. The hermetic compressor according to claim 1, wherein the under cut is formed continuously to a skirt surface.

5. The hermetic compressor according to claim 1, wherein the piston has a circumferentially formed land in a predetermined width from the top surface, and the circumferentially formed land is provided with an annular groove.

6. The hermetic compressor according to claim 1, wherein the piston has a taper in at least one of a boundary between the top surface and the outer circumferential surface and a boundary between a skirt surface and the outer circumferential surface.

7. The hermetic compressor according to claim 1, further comprising a motor element for rotating the crankshaft, the motor element being inverter-driven at plural operation frequencies including an operation frequency that is at least power supply frequency or less.

8. The hermetic compressor according to claim 1, wherein the refrigerant gas is R600a.

9. A hermetic compressor comprising a housing which contains oil and houses a compression mechanism for compressing a refrigerant gas,

the compression mechanism comprising:

a crankshaft disposed in a vertical direction and having a main shaft and an eccentric shaft;

a cylinder;

a cylindrical piston reciprocating in the cylinder in a direction of a cylinder axis; and

a connecting portion for connecting the piston to the eccentric shaft;

the piston comprising:

a skirt surface at a side of the connecting portion;

a top surface at a side of the cylinder; and

an outer circumferential surface parallel to the cylinder;

wherein the outer circumferential surface includes a land that is on the same surface as the outer circumferential surface of the piston and an under cut that is recess with respect to the outer circumferential surface;

the land comprising:

a circumferentially formed land formed in a predetermined width from the top surface toward the skirt surface around the piston; and

an axially formed land formed in a predetermined width on an outer circumferential surfaces at 0°, 90°, 180° and 270° with respect to the cylinder axis as a center, and continuously formed from the circumferentially formed land to the skirt surface.

10. The hermetic compressor according to claim 9, wherein the under cut is formed continuously to the skirt surface.

11. The hermetic compressor according to claim 9, wherein the under cut is formed discontinuously to the skirt surface, and when the piston is at least in a bottom dead center, the under cut communicates with space inside the housing.